

AMENDMENTS IN THE CLAIMS:

1. (Currently Amended) A structure for producing a localized light source in a medium, *comprising*

- a source generating incident light ~~(15, 75),~~
- a surface-plasmon-supporting layer ~~(11, 71),~~
- ~~a transmitter-localizer (13, 14, 73, 74) between said surface plasmon-supporting layer and said medium (17, 77, 97) providing an interface with predetermined electromagnetic properties,~~means for transmitting and localizing plasmons between said surface-plasmon-supporting layer and said medium,
- said transmitter-localizer means including between said surface-plasmon-supporting layer and said medium
- a discontinuity for providing a localized electromagnetic field deviation and
- a plasmon-transmitting interface with predetermined electromagnetic properties at said medium
- wherein said incident light excites a surface plasmon ~~(16, 76)~~ in said surface-plasmon-supporting layer, which plasmon in turn produces said localized light source ~~(48, 78)~~ at said plasmon-transmitting interface by localizing the energy of said surface plasmon.

2. (Currently Amended) The structure of claim 1, *wherein*

~~the transmitter-localizer between the surface-plasmon-supporting layer (11, 71) and the medium (77, 97) includes means for~~ the discontinuity for providing a localized electromagnetic field deviation is a physical discontinuity localizing the electromagnetic field associated with a plasmon generated by said surface-plasmon-supporting layer.

3. (Currently Amended) The structure of claim 2, *wherein* ~~the means for localizing the electromagnetic field associated with a plasmon~~ the discontinuity consists of or includes one or more protrusions (14, 74) contacting the medium.
4. (Currently Amended) The structure of claim 2, *wherein* ~~the means for localizing the electromagnetic field associated with a plasmon~~ the discontinuity consists of or includes of one or more inclusions (54) ~~to localize the light source.~~
5. (Currently Amended) The structure of ~~any of the preceding claims~~ claim 1, *further including* means, in particular a grating (29), for enhancing the generation of surface plasmons by the surface-plasmon-supporting layer (11, 71).
6. (Currently Amended) The structure of ~~any of the preceding claims~~ claim 1, *further including* a substrate (12, 72) carrying the surface-plasmon-supporting layer (11, 71) and the transmitter ~~localizes~~ localizer (13, 14; 73, 74), and providing a transfer of the incident light (15, 75).
7. (Currently Amended) The structure of ~~any of the preceding claims~~ claim 1, *wherein* the surface-plasmon-supporting layer (34) is made of two or more different materials (32, 33).
8. (Currently Amended) The structure of ~~any of the preceding claims~~ claim 1, *wherein* a plurality of sources for generating incident light (45, 49) is provided for simultaneous or sequential use.

9. (Currently Amended) The structure of ~~of any of the preceding claims~~claim 1,
wherein

the surface-plasmon-supporting layer consists or comprises a plurality of patches or strips-~~(64)~~ which are individually addressable.

10. (Currently Amended) The structure of ~~any of the preceding claims~~claim 1,
further including

one or more additional surface-plasmon-supporting layers for enhancing the localized light source.

11. (Currently Amended) The structure of ~~any of the preceding claims~~claim 1,
wherein

the various layers and elements of said structure are structured, in particular curved,
to enable ~~contacting the medium at one particular location~~generating the localized
light source in one or several locations of the plasmon-transmitting interface to the
medium.

12. (Currently Amended) The structure of claim ~~3 or 4~~1, *wherein*

the width and/or length of the means for localizing the generated plasmon, in particular of the protrusion-~~(14, 74)~~, is a fraction of the wavelength of the localized light source, preferably less than about one tenth of said wavelength.

13. (Original) The structure of claim 1, *wherein*

for visible light operation, the surface plasmon-supporting layer consists of or includes any of gold, silver and/or copper.

14. (Original) The structure of claim 1, *wherein*

for operation in the UV region, the surface plasmon-supporting layer consists of or includes a metal, preferably aluminum.

15. (Original) The structure of claim 1, *wherein* for operation in the infrared region, the surface plasmon-supporting layer consists of or includes a metal and/or a metal-oxide mixture, preferably indium tin oxide.

16. (Currently Amended) A method for ~~producing~~generating a localized light source in a medium, *comprising the following steps:*

- generating incident light~~(15, 75)~~,
- exciting a surface plasmon~~(16)~~ from said incident light in a surface-plasmon-supporting element~~(11, 71)~~,
- transmitting said surface plasmon by plasmon transmission means to a localized interface with predetermined electromagnetic properties between said ~~surface plasmon transmission means supporting element~~ and said medium, ~~in which interface said surface plasmon produces so that~~ said localized light source is generated at said interface.

17. (Currently Amended) ~~Use of a structure according to any of the claims 1 to 15 and/or the method according to claim 16 for optical lithography.~~The method for generating a localized light source according to claim 16, wherein surface plasmons are excited only on the side of the surface plasmon-supporting element attached to the plasmon transmission means.

18. (Currently Amended) ~~Use of a structure according to any of the claims 1 to 15 and/or the method according to claim 16 for optical data storage.~~The method for generating a localized light source according to claim 16, wherein surface plasmons are excited on both sides of the surface plasmon-supporting element.

19. (Currently Amended) ~~Use of a structure according to any of the claims 1 to 15~~claim 1 in or for optical lithography and/or optical data storage and/or high resolution optical microscopy and/or the method according to claim 16 in or for biochips.

20. (Currently Amended) Use of a ~~structure~~method according to ~~any of the claims 1 to 15~~claim 16 in or for optical lithography and/or optical data storage and/or high resolution optical microscopy and/or biochip~~the method according to claim 16 for high resolution optical microscopy.~~